ADDENDUM NO. 2

TO: ALL BIDDERS OF RECORD

PROJECT: Bannack State Park Detention Basin Project

FWP PROJECT #: 7116103

DATE: 02/28/17

FROM: George Austiguy, Pioneer Technical Services

Acknowledge receipt of this addendum by inserting its number and date in the Proposal Form and on the Bid Envelope. Failure to do so may subject bidder to disqualification.

This Addendum forms a part of the Contract Documents. Clarification and/or modifications are as follows:

Contractor Questions and Clarifications

1. **Question:** What is the extent of the clay area to be removed, and how were the limits determined?

   Response: The extent of the clay layer was estimated using data from Test Pit-07, Borehole-03 and Borehole-02. A clay cross sectional area (415sf) and overburden cross sectional area (1,206.5sf) was estimated from the profile on sheet 5-2 and applied across the floodplain (~100ft). ((415sf+1,206.5sf)*100lf)/27 = 6,005.6cy, a 10% contingency was added to reach 6,606cy as shown on sheet 6-1.

2. **Question:** Do the quantities on Sheet 6-1 include additional excavation and subsequent fill required to remove clay layer?

   Response: The quantities on sheet 6-1 do include the over excavation required to remove the clay layer. The revised quantity table on Sheet 6-1 (included in this addendum) provides a breakdown of excavation and fill quantities.

3. **Question:** Is it acceptable to use pre-cast for the concrete outlet structure?

   Response: Pre-cast is acceptable, Contractor must request structural design criteria and provide structural submittal for Engineer approval.

4. **Question:** Are construction (cold) joints permissible on the outlet structure?

Response: Yes, construction (cold) joints are permissible per sheet 4-6.

5. **Question:** Is a digital version of the proposed work available?

   Response: The existing ground survey, proposed trail and basin/embankment design surfaces in 2014 Autodesk Civil 3d format are available for download at the following link:

   https://pioneer-technical.sharefile.com/d-s7ca94da97f44a37a

6. **Question**: Does MFWP have water rights for Grasshopper Creek, which the Contractor can use for dust control and construction?

   Response: No, the Contractor will be required to acquire temporary water rights from DNRC for dust control and construction work.

7. **Question:** Can the construction water for dust control and backfill be taken from Grasshopper Creek? If so could you show an approximate location the water could be drawn from the creek?

   Response: Yes, Grasshopper Creek may be used for dust control and backfill, after proper permits are obtained. Contact DNRC to obtain a temporary construction water right. The specific location for the point of diversion must be coordinated with the Bannack State Park Staff.

8. **Question:** Is camping allowed at the job-site.

   Response: No long term camping is available within Bannack State Park. There are fee based camping sites at the State Park with a 14-day maximum occupancy. Camping may be available on nearby United States Forest Service or Bureau of Land Management property.

9. **Question:** Do all deliveries need to be between 7:00am and 10:00am, i.e. riprap?

   Response: All deliveries, mobilization and de-mobilization shall occur between 7:00am and 10:00am. Deliveries that require additional time require pre-approval by the Engineer and Bannack State Park staff.

10. **Question:** Where is the nearest Landfill?

    Response: The nearest landfill is near Dillon (~32 miles from Bannack State Park).

11. **Question:** Can the access bridge location be moved?

Response: Yes the location of the bridge can be adjusted. However the adjustment limits are constrained by adjacent buildings and the crossing must line up with the existing Hangman's Gulch Road. Final placement will need to be approved by the Engineer and Bannack Park Staff.

12. **Question:** Is the Contractor required to re-place the wood bridge to access Hangman's Gulch after construction is complete?

    Response: No, Montana State Parks will construct a new wood bridge after construction is complete.

13. **Question:** Will the Contractor be allowed to use GPS operated equipment instead of traditional surveying methods?

    Response: Yes, GPS operated equipment will be allowed.

14. **Question:** Is there any flexibility with the start date?

    Response: The start date has not been set yet. If site conditions prohibit the start of construction work the schedule will be adjusted accordingly.

15. **Question:** Will the Type C Fill specification of 4" minus be enforced?

    Response: Yes.

16. **Question:** Is it necessary to screen Type C fill to match the gradation specification?

    Response: Some screening may be required to produce the Type C fill per the technical specifications.

17. **Question:** If the screened material does not meet the gradation specification will the Contractor be required to import material and mix it to reach the specification?

    Response: The specifications require Type C Fill to come from on-site sources. The Type C Fill specification was developed from on-site test pit data. If necessary, additional material may be excavated from the detention basin.

18. **Question:** If the Type C Fill Specification cannot be reached by mixing the material, will the Contractor be required to haul the native material off site and haul in fill material meeting the Type C Fill Specification?

    Response: Excess material not meeting specification may be spread in the bottom of the basin and in an Engineer specified location upstream of the basin. Oversized cobbles and boulders can be placed at the bottom of the inlet

channel. In the event suitable material cannot be found on-site the Contractor, Engineer and Owner will determine an appropriate course of action.

19. **Question:** Is the fencing 4 or 5 strand fence. Can you please provide a detail of the fence?

    Response: The new fence shall be minimum 4 strand, per sheet 5-7.

20. **Question:** Can hydroseed be used instead of coir fabric for the detention pond? If so, what type of mulch and application lbs./ac?

    Response: No.

21. **Question:** What type of coir fabric is to be installed?

    Response: Coir fabric shall be a coir fabric machine produced mat of 100% coconut fiber, per the Technical Specifications Section 2710, Part 2.01 Geotextile, Paragraph B, page 142.

22. **Question:** Do you have estimated quantities for the access routes, realigned road, staging area, or stockpile area? All we see is the breakdowns for the retention pond.

    Response: The areas on the lower left hand side of sheet 6-1 include the embankment/basin, trail re-alignment, staging and stockpile areas. The access route is along an existing road and is to be reclaimed to pre-construction condition. The extent of reclamation on the road is dependent on the extent of disturbance and widening required for the Contractor to access the site. It is ~1,300 lf from Bannack Road to the start of the trail re-alignment.

23. **Question:** The Detail on Sheet 5-7 shows wood stakes being used but, the note in the middle of the page says wood stakes are not allowed on compacted embankment?

    Response: Wood stakes are not allowed on the compacted embankment. Wood stakes are hard to drive into compacted fill and can compromise the embankment over time. Manufacturer provided metal stakes or Engineer approved alternate shall be used for the embankment and only driven through the 6 inches of Type F material. Wood stakes may be used on any excavated/native ground.

24. **Question:** Are there any time periods when construction work will not be allowed:

    Response: No construction work during Bannack Days (July 10 to July 18) will be allowed. Also, anything disturbed by the Contractor between the Hangman's Gulch gallows and town needs to be reconditioned by the end of the day on July

9th. Roads bladed smooth, walkways in place and clean, equipment to be stored within the construction and staging area, no equipment in or around town.

25. **Question:** Is working on weekends allowed?

Response: Working on weekends is allowed.

Changes to Project Manual

1. Bid Proposal sheet has been revised to include signature section and addendum section.

2. The Earthquake Insurance requirement has been removed from the Project Manual.

Changes to Specifications

SECTION 02210 - Fill Materials and Placement Requirements
Part 2 – PRODUCTS

1. **Part 2.01 Soil Materials, Replace the existing Paragraph C with the following replacement paragraph:**

   Type C Fill: Clean, well-graded naturally occurring soil mixture for construction of the embankment. Unless otherwise directed by the Engineer, Type C fill shall be obtained from on-site excavation. Excavated material may have over sized cobbles and boulders that will require removal to meet this specification. Type C Fill shall conform to the following gradation criteria and have a Plasticity Index less than 10, or otherwise approved by the Engineer:

Particle Size	% Finer Than
4-inch	100
3-inch	90-100
1 1/2-inch	70-100
#4 sieve	25-60
#40 sieve	10-30
#200 sieve	2-12

   Summary of Change: Removed Trail fill as a construction task required to be built with type C Fill.

2. **Part 2.01 Soil Materials, Replace the existing Paragraph E with the following replacement paragraph:**

   Type E Organic Material: Type E material including aged manure or organic compost shall be from an Engineered approved source. Organic material

shall be mixed with Type D material to produce Type F Growth Media. Type E material shall meet the following criteria:

Specification	Reporting Method	Threshold Value	Units	Test Method**
Wet Bulk Density	Pounds/cubic yard on as received material	Report Value, No Spec	lbs/cy	Test Methods for the Examination of Composting and Compost (TMECC) Test Method 03.01-C - Bulk Density
Moisture Content	Percent on as received sample	48 max	%	Test Methods for the Examination of Composting and Compost (TMECC) Test Method 03.09-A - Moisture Content at 70^{o}C
Organic Matter	Percent Organic Matter as dry weight basis	30 min	%	Test Methods for the Examination of Composting and Compost (TMECC) Test Method 02.02 - Laboratory Sample Preparation, Methods 02.02-C, 02.02-D, and 02.02-E and TMECC Test Method 05.07A-Loss on Ignition (at 550^{o}C)
Gradation	Percent passing 1" in diameter	100	%	Test Methods for the Examination of Composting and Compost (TMECC) Test Method 02.02-B - Sample Sieve
Carbon:Nitrogen Ratio	Ration C:N	18-25:1		Test Methods for the Examination of Composting and Compost (TMECC) Test Method 05.02-A Carbon to Nitrogen Ratio
Soil Fertility	NPK		N:P:K	Test Methods for the Examination of Composting and Compost (TMECC). Nitrogen: Test Method 04.02-B - Nitrate Nitrogen; 04.03-B Water Soluble Phosphorus; 04.04-B Water-Soluble Potassium
Compost Class	Class A or B	Class A		Defined by US EPA CFR Part 503

Summary of Change: Percent Organic Matter as dry weight basis was reduced from 45% minimum to 30% minimum.

3. **Part 2.01 Soil Materials, Replace the existing Paragraph F with following replacement paragraph:**

   Type F Growth Media –Type F growth media shall consist of a mixture of Type D material and Type E Organic material to be placed as shown on the Drawings. Type E Organic material shall be mixed with Type D material at a rate of 125 wet tons per acre. If Type F material is to be pre-mixed, it shall be mixed at a ratio of (2) Type D Material to (1) Type E Organic Material by volume. Ratio for Type F Growth Media may vary depending on Percent of Organic Matter present in Type E Organic Material.

   Summary of Change: Provided a ratio for pre-mixing Type D and Type E to produce Type F Fill.

4. **Part 2.01 Soil Materials, Add the following paragraph, Paragraph G**:

   Type G Fill: General fill free of debris, deleterious or objectionable materials, and rocks larger than 6-inches. Type G Fill shall be a compactable, well-graded, granular material approved by Engineer. Type G fill may used for temporary roads, berms, dikes or other temporary structures built for construction purposes and as granular backfill material to be used for trail construction.

   Summary of Change: Added Type G Fill. Fill to be used for trail construction and for temporary structures.

5. **Part 3.01 Source of Materials, added the following paragraph, Paragraph D**:

   Type G Fill shall be salvaged on site as specified in Part 2.01 G.

   Summary of Change: Added a source for Type G Fill.

6. **Part 3.06 Field Quality Control**, **Replace the existing Paragraph A with the following replacement paragraph:**

   Testing for compaction control and gradation will be conducted by the Contractor in accordance with these specifications. Testing to be performed at a minimum every 1000 CY of structural fill or every lift. Embankment not meeting the requirements of these specifications shall be corrected at no expense to MTFWP. The Contractor must keep written documentation of their test results and will deliver a copy of all testing to the Engineer.

   Summary of Change: Any corrections to embankment shall be corrected at no expense to MTFWP.

Changes to Plans

1. **Sheet 1-3:** Added approximate length of road to be reclaimed after work is complete.

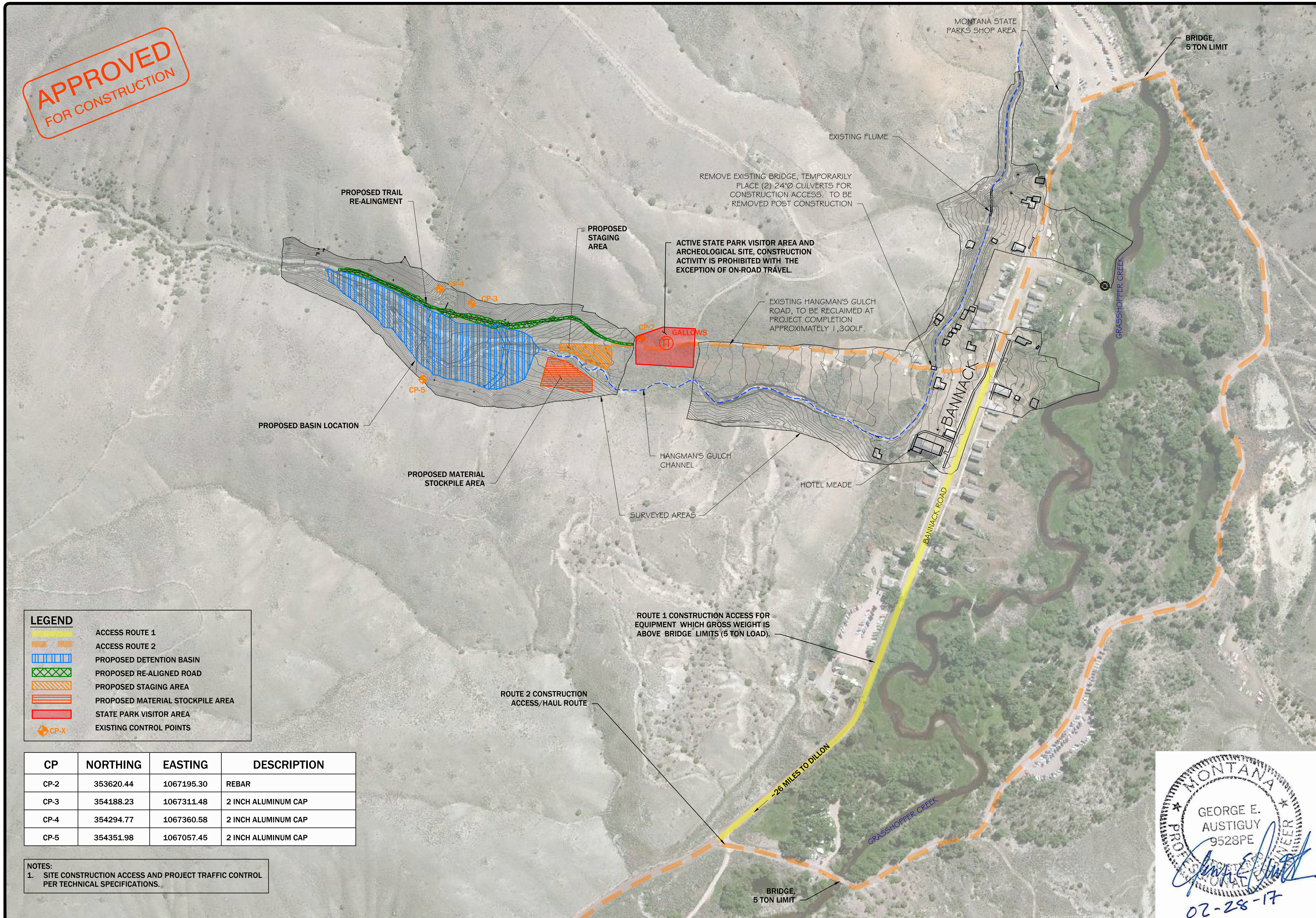
2. **Sheet 4-6:** Added permissible construction joint locations.

3. **Sheet 5-2:** Updated quantity table to include inlet channel over-excavation, added maximum excavation slope of 1.5H:1V for over-excavation note and added cross sectional areas for clay layer and overburden material.

4. **Sheet 5-7:** Added Fence Typical Detail.

5. **Sheet 6-1:** Revised quantity table and areas to clarify quantities and to reflect a more accurate estimate of proposed work.

END OF ADDENDUM NO.2



LEGEND

- ACCESS ROUTE 1
- ACCESS ROUTE 2
- PROPOSED DETENTION BASIN
- PROPOSED RE-ALIGNED ROAD
- PROPOSED STAGING AREA
- PROPOSED MATERIAL STOCKPILE AREA
- STATE PARK VISITOR AREA
- CP-X EXISTING CONTROL POINTS

CP	NORTHING	EASTING	DESCRIPTION
CP-2	353620.44	1067195.30	REBAR
CP-3	354188.23	1067311.48	2 INCH ALUMINUM CAP
CP-4	354294.77	1067360.58	2 INCH ALUMINUM CAP
CP-5	354351.98	1067057.45	2 INCH ALUMINUM CAP

NOTES:
1. SITE CONSTRUCTION ACCESS AND PROJECT TRAFFIC CONTROL PER TECHNICAL SPECIFICATIONS.

REVISION: DATE:	BY:	DESC:
02/28/17	GEA	ADDENDUM NO. 2

DRAWN BY: JJJ
DESIGNED BY: CEB
CHECKED BY: GEA
APPROVED BY: GEA
PROJECT NO:
DATE: 01/17/17

DISPLAYED AS:
COORD SYS/ZONE: MONTANA ST. PLANES
DATUM: NAD83, NAVD88
UNITS: INT. FEET
SOURCE: PIONEER/BING

SCALE IN FEET
0 150 300

MONTANA FISH, WILDLIFE & PARKS
BANNACK STATE PARK
DETENTION BASIN

BANNACK SITE PLAN

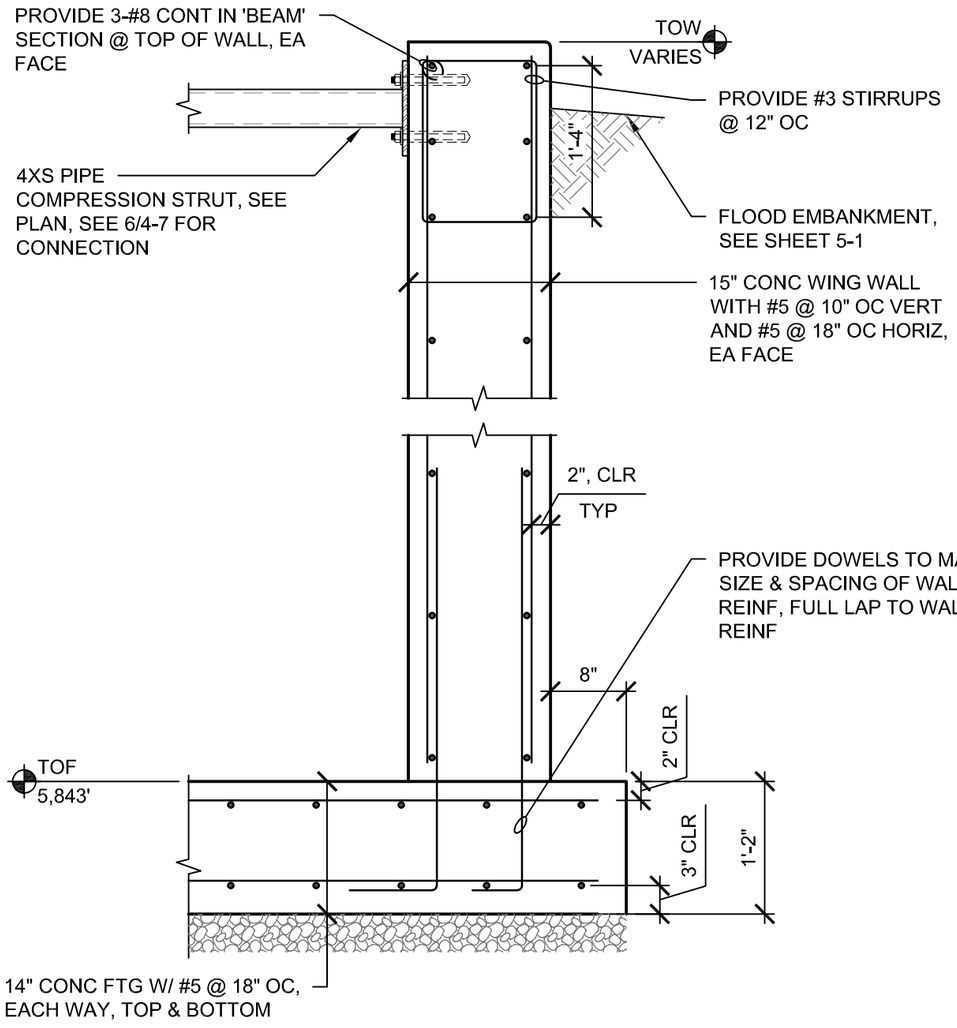
PIONEER TECHNICAL SERVICES, INC
106 PRONGHORN TRAIL, SUITE A
BOZEMAN, MT 59718
(406) 388-8578

SHEET 1-3

Image courtesy of USGS Earthstar Geographics

2/28/2017 10:23:36 AM G:\MTSP - BANNACK\DETENTION BASIN DETAIL DESIGN\DRAWINGS\CAD\ADDENDUM2\BNACK-CO-100-PLN-001-16_ADD2.DWG

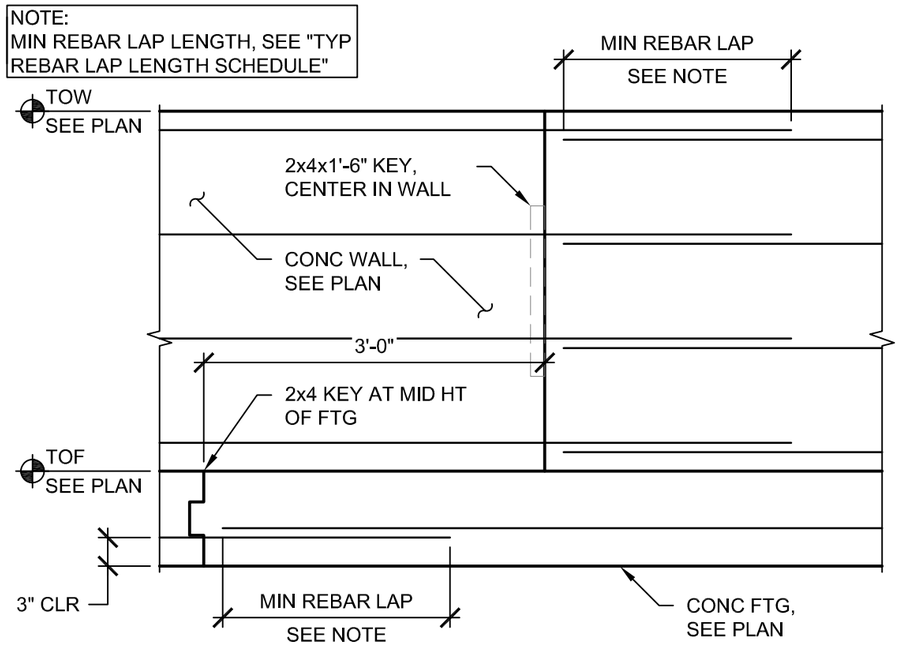
NOTE:
INSTALL PIPE STRUTS BEFORE BACKFILLING WING WALLS



4 (N) CONC WING WALL - TYPE 2

SCALE: NTS

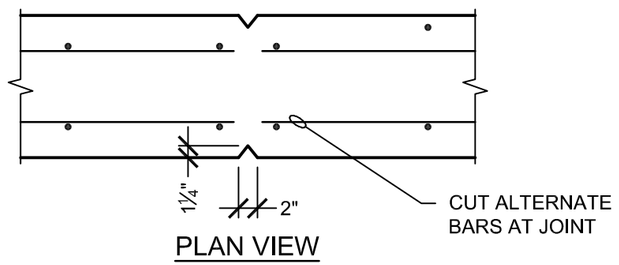
NOTE:
MIN REBAR LAP LENGTH, SEE "TYP REBAR LAP LENGTH SCHEDULE"



5 TYP WALL & FTG CONSTRUCTION JOINT

SCALE: NTS

NOTE:
1. ESTABLISH CONTROL JOINTS AT 20'-0" OC MAX SPACING
2. JOINT LOCATION TO BE APPROVED BY ENGINEER
3. EXTEND CJ ALONG TOP SURFACE & DOWN BACK SIDE WHERE EXPOSED TO VIEW
4. HORIZONTAL CONSTRUCTION JOINTS TO BE PLACED AT HALF OR THIRD POINTS OF WALL. PROVIDE CONT 2x4 KEY.



PLAN VIEW

5A TYP VERT CONTROL JT IN CONC WALL

SCALE: NTS

MONTANA
TIMOTHY KYLE PATTERSON
15121PE
2-24-2017
LICENSED
PROFESSIONAL ENGINEER

bce STRUCTURAL
BEAUDETTE CONSULTING ENGINEERS, INC.
Missoula Kalispell
Bozeman Billings
www.BCEweb.com
(406) 721-7315
BCE PROJECT #16-872

REVISION: DATE:	BY:	DESC:
02/24/17	AMS	ADDENDUM 1

DRAWN BY:
DESIGNED BY:
CHECKED BY:
APPROVED BY:
PROJECT NO:
DATE:

DISPLAYED AS:
COORD SYS/ZONE:
DATUM:
UNITS:
SOURCE:

SCALE IN FEET
0

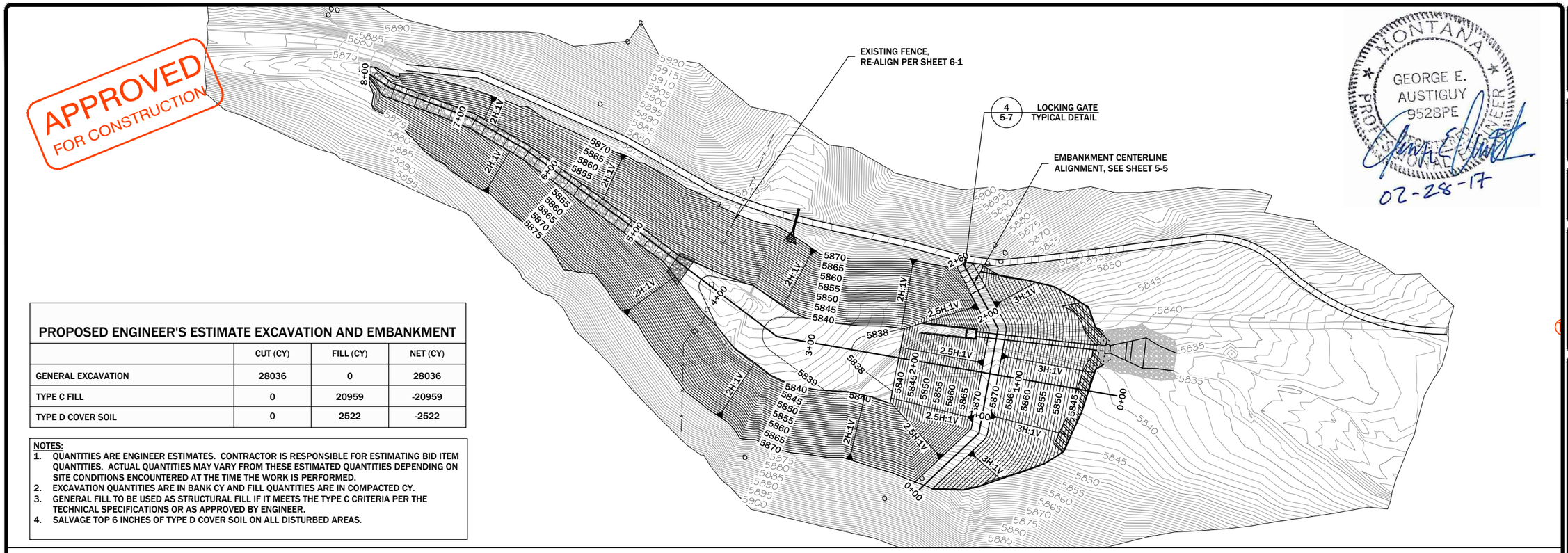
MONTANA FISH, WILDLIFE & PARKS
BANNACK STATE PARK
DETENTION BASIN

BANNACK
DETENTION BASIN
OUTLET STRUCTURE
DETAILS

PIONEER TECHNICAL SERVICES, INC.

SHEET
4-6

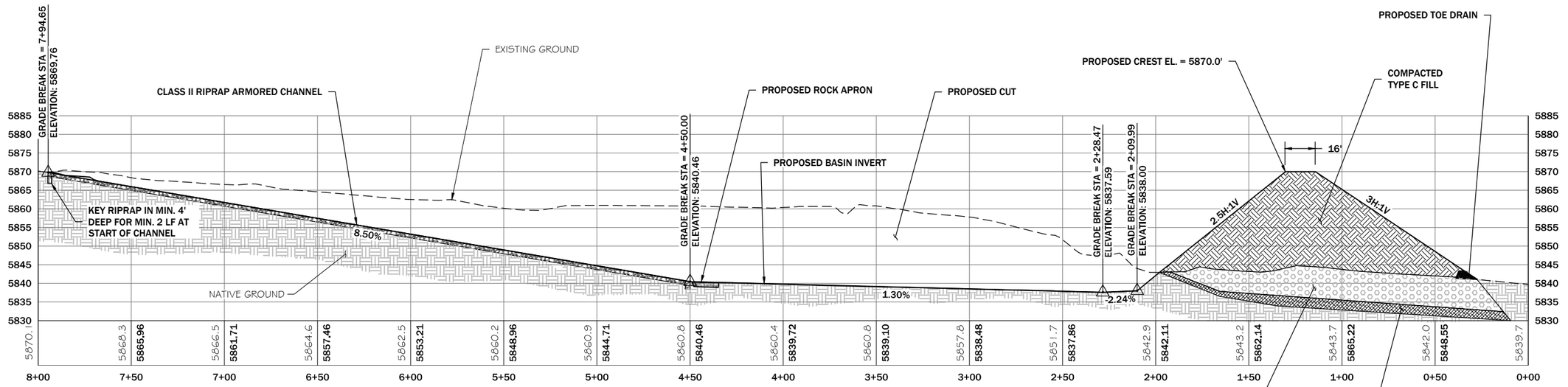
APPROVED
FOR CONSTRUCTION



PROPOSED ENGINEER'S ESTIMATE EXCAVATION AND EMBANKMENT

	CUT (CY)	FILL (CY)	NET (CY)
GENERAL EXCAVATION	28036	0	28036
TYPE C FILL	0	20959	-20959
TYPE D COVER SOIL	0	2522	-2522

NOTES:
1. QUANTITIES ARE ENGINEER ESTIMATES. CONTRACTOR IS RESPONSIBLE FOR ESTIMATING BID ITEM QUANTITIES. ACTUAL QUANTITIES MAY VARY FROM THESE ESTIMATED QUANTITIES DEPENDING ON SITE CONDITIONS ENCOUNTERED AT THE TIME THE WORK IS PERFORMED.
2. EXCAVATION QUANTITIES ARE IN BANK CY AND FILL QUANTITIES ARE IN COMPACTED CY.
3. GENERAL FILL TO BE USED AS STRUCTURAL FILL IF IT MEETS THE TYPE C CRITERIA PER THE TECHNICAL SPECIFICATIONS OR AS APPROVED BY ENGINEER.
4. SALVAGE TOP 6 INCHES OF TYPE D COVER SOIL ON ALL DISTURBED AREAS.



PROPOSED DETENTION BASIN PROFILE

SCALE: 1" = 60'

REVISION:

DATE:	BY:	DESC:
02/28/17	GEA	ADDENDUM 2

DRAWN BY: JJJ
DESIGNED BY: CEB
CHECKED BY: GEA
APPROVED BY: GEA
PROJECT NO:
DATE: 01/17/17

DISPLAYED AS:
COORD SYS/ZONE: MONTANA ST. PLANES
DATUM: NAD83, NAVD88
UNITS: INT. FEET
SOURCE: PIONEER

SCALE IN FEET
0 50 100

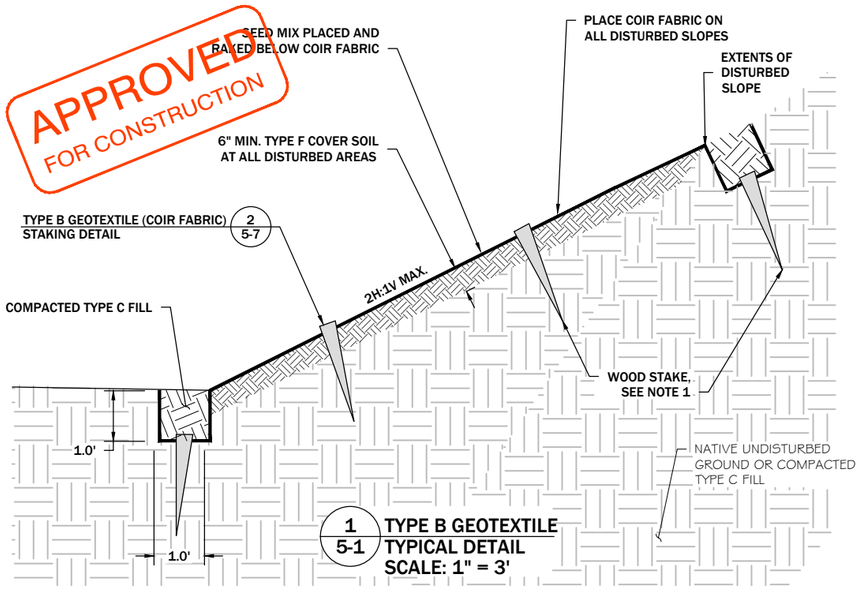
MONTANA FISH, WILDLIFE & PARKS
BANNACK STATE PARK
DETENTION BASIN

BANNACK
DETENTION BASIN
PLAN AND PROFILE

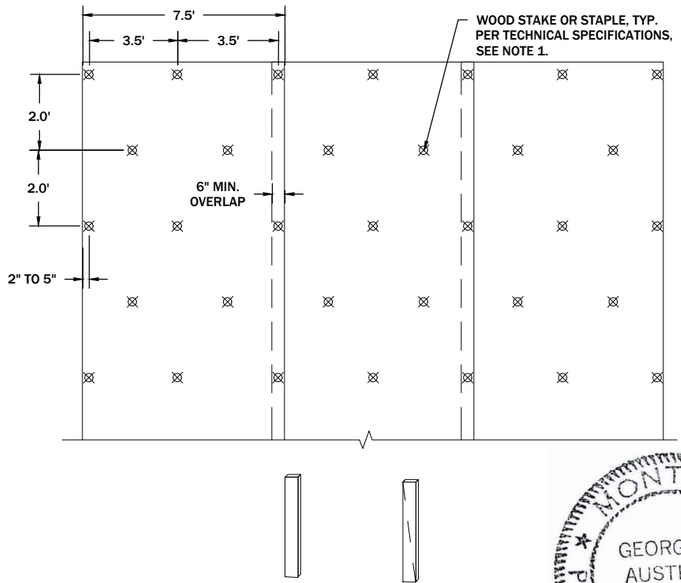
PIONEER
TECHNICAL SERVICES, INC.
106 PRONGHORN TRAIL, SUITE A
BOZEMAN, MT 59718
(406) 388-8578

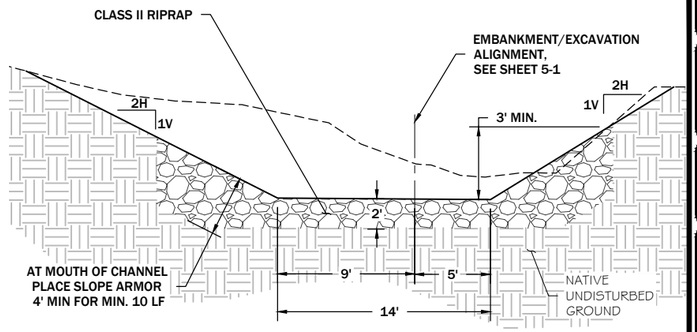
SHEET
5-2

APPROVED
FOR CONSTRUCTION

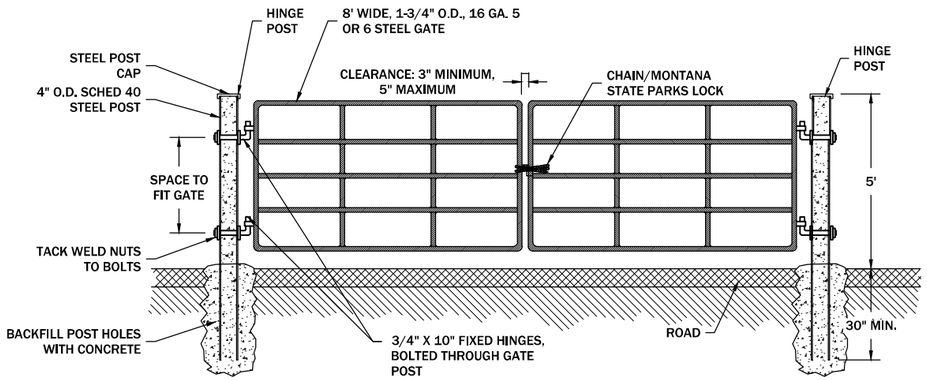


1 / 5-1 TYPE B GEOTEXTILE TYPICAL DETAIL
SCALE: 1" = 3'





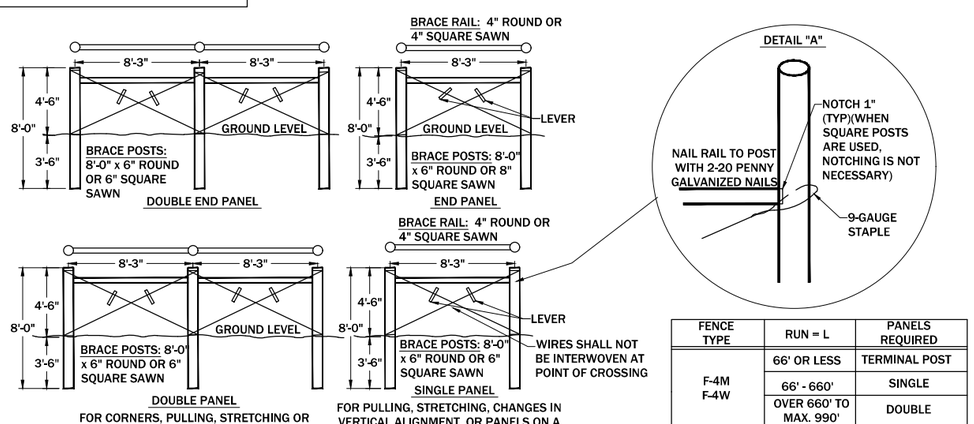
3 / 5-1 ARMORED CHANNEL INLET SECTION
SCALE: 1" = 10'



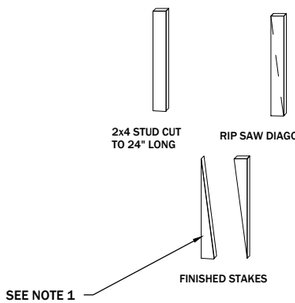
ELEVATION VIEW

NOTES:
1. ENSURE HINGE POST & LOCK POST ARE STRAIGHT AND VERTICAL.
2. GATE COLOR SHALL BE BROWN.
3. INSTALL END CAPS ON HINGES.
4. PAINT POSTS TO MATCH GATE.

4 / 5-2 LOCKING GATE TYPICAL DETAIL
SCALE: NTS

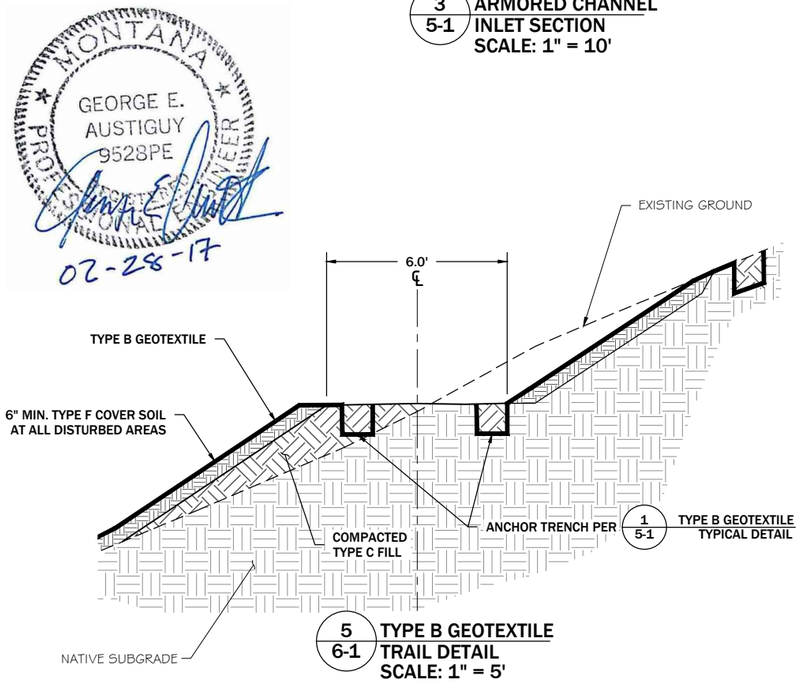


FENCE TYPE	RUN = L	PANELS REQUIRED
F-4M F-4W	66' OR LESS	TERMINAL POST
	66' - 660'	SINGLE
	OVER 660' TO MAX. 990'	DOUBLE

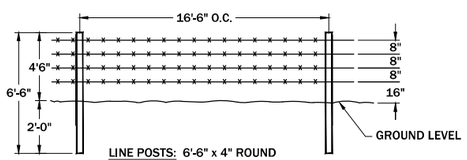


NOTES:
1. WOOD STAKES MAY NOT BE USED ON COMPACTED EMBANKMENT. USE MANUFACTURER PROVIDED STAPLE OR ENGINEER APPROVED EQUAL ON COMPACTED EMBANKMENT.

2 / 5-7 TYPE B GEOTEXTILE STAKING DETAIL
SCALE: 1" = 6'



5 / 6-1 TYPE B GEOTEXTILE TRAIL DETAIL
SCALE: 1" = 5'



LINE POSTS: 6'-6" x 4" ROUND GREEN-TREATED WOOD POSTS OR METAL POSTS AS APPROVED BY OWNER

NOTES:
1. PLACE ALL FENCE WIRE ON SIDE OF POST OPPOSITE WORK AREA EXCEPT AT CURVES, PLACE THE WIRE ON THE OUTSIDE OF THE CURVE. PLACE WIRE ON WINDWARD SIDE OF POSTS IN AREAS SUBJECT TO HIGH VELOCITY WINDS AND MOVING DEBRIS, EXCEPT ON CURVES.
2. MEASURE POST SPACING GENERALLY PARALLEL TO GROUND.
3. SPACE LINE POSTS 16'-6" APART. ALSO SPACE LINE POSTS 16'-6" FROM BRACE OR PANEL POSTS.
4. A DEADMAN MAY BE A CONCRETE BLOCK, A CAST-IN-PLACE CONCRETE BLOCK, A ROCK OR OTHER APPROVED OBJECT, WEIGHING AT LEAST 150 POUNDS AND COVERED AT LEAST 2 FEET BELOW GROUND SURFACE.
5. TYPE F-4M: 4 STRAND SMOOTH WIRE FENCE WITH METAL LINE POSTS.
6. TYPE F-4W: 4 STRAND SMOOTH WIRE FENCE WITH WOOD LINE POSTS.
7. IF STAYS ARE USED, ONLY PLACE STAY ON BOTTOM THREE WIRES.
8. CONSTRUCT FENCES IN LOCATIONS STAKED BY SURVEYOR.

6 / 6-1 FENCE TYPICAL DETAIL
SCALE: NTS

GEORGE E. AUSTIGUY 9528PE PROFESSIONAL ENGINEER MONTANA
02-28-17

REVISION: DATE:	BY:	DESC:
02/28/17	GEA	ADDENDUM NO. 2

DRAWN BY: JBU
DESIGNED BY: CEB
CHECKED BY: GEA
APPROVED BY: GEA
PROJECT NO:
DATE: 01/20/17

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 NA

MONTANA FISH, WILDLIFE & PARKS
BANNACK STATE PARK
DETENTION BASIN

BANNACK
DETENTION BASIN
DETAILS

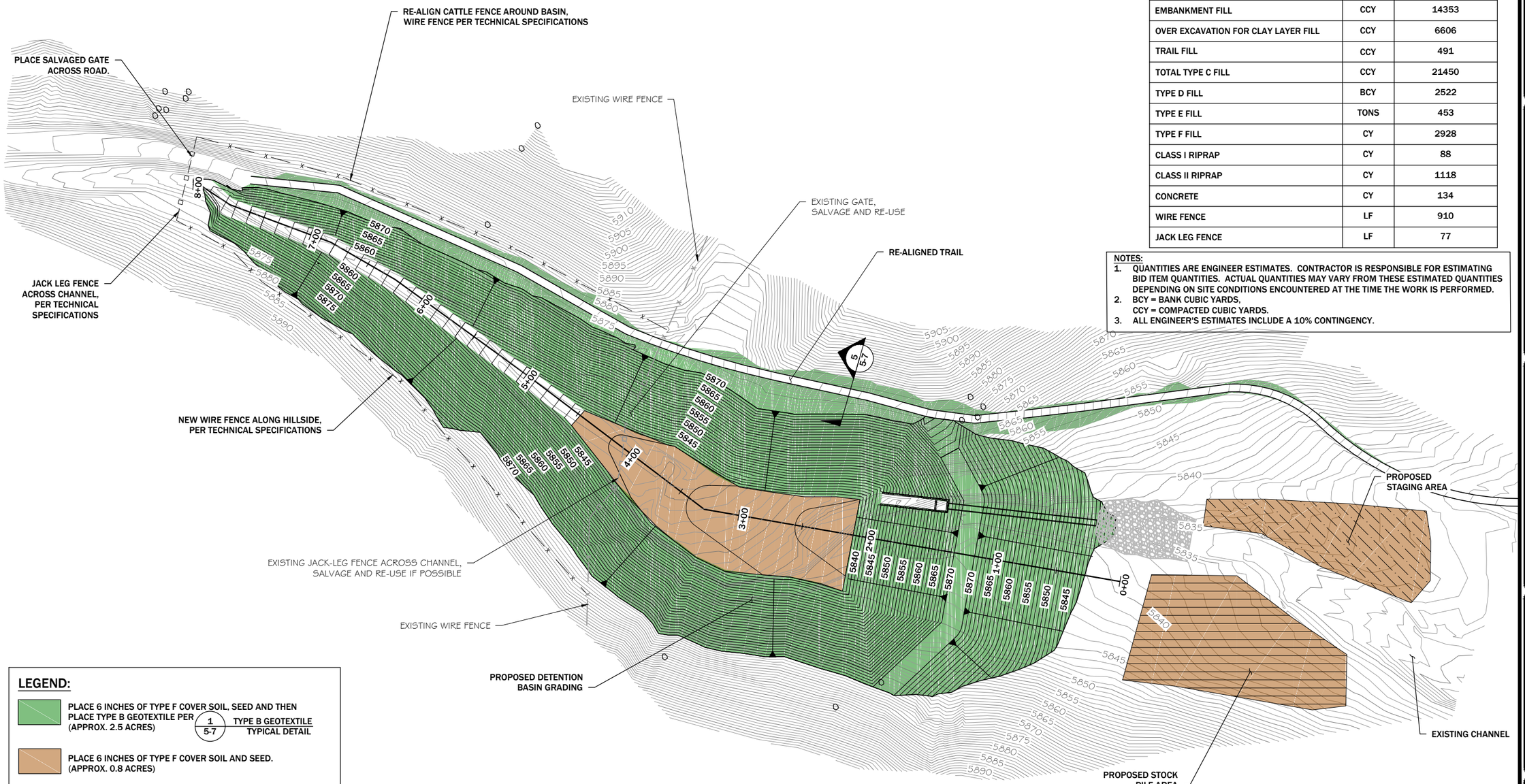
PIONEER
TECHNICAL SERVICES, INC.
106 PRONGHORN TRAIL, SUITE A
BOZEMAN, MT 59718
(406) 388-8578

SHEET
5-7

APPROVED
FOR CONSTRUCTION

PROPOSED ENGINEER'S ESTIMATE SITE MATERIALS		
	UNITS[2]	QUANTITY
GENERAL EXCAVATION		
BASIN EXCAVATION	BCY	21430
OVER EXCAVATION FOR CLAY LAYER	BCY	6606
CHANNEL OVER EXCAVATION	BCY	838
TRAIL EXCAVATION	BCY	136
TOTAL GENERAL EXCAVATION	BCY	29011
TYPE A FILL	CY	202
TYPE B FILL	CY	56
TYPE C FILL		
EMBANKMENT FILL	CCY	14353
OVER EXCAVATION FOR CLAY LAYER FILL	CCY	6606
TRAIL FILL	CCY	491
TOTAL TYPE C FILL	CCY	21450
TYPE D FILL	BCY	2522
TYPE E FILL	TONS	453
TYPE F FILL	CY	2928
CLASS I RIPRAP	CY	88
CLASS II RIPRAP	CY	1118
CONCRETE	CY	134
WIRE FENCE	LF	910
JACK LEG FENCE	LF	77

NOTES:
1. QUANTITIES ARE ENGINEER ESTIMATES. CONTRACTOR IS RESPONSIBLE FOR ESTIMATING BID ITEM QUANTITIES. ACTUAL QUANTITIES MAY VARY FROM THESE ESTIMATED QUANTITIES DEPENDING ON SITE CONDITIONS ENCOUNTERED AT THE TIME THE WORK IS PERFORMED.
2. BCY = BANK CUBIC YARDS, CCY = COMPACTED CUBIC YARDS.
3. ALL ENGINEER'S ESTIMATES INCLUDE A 10% CONTINGENCY.



LEGEND:

PLACE 6 INCHES OF TYPE F COVER SOIL, SEED AND THEN PLACE TYPE B GEOTEXTILE PER (APPROX. 2.5 ACRES) — 1 / 5-7 TYPE B GEOTEXTILE TYPICAL DETAIL

PLACE 6 INCHES OF TYPE F COVER SOIL AND SEED. (APPROX. 0.8 ACRES)

REVISION:		
DATE:	BY:	DESC:
02/28/17	GEA	ADDENDUM 2

DRAWN BY: JJJ
DESIGNED BY: JJJ
CHECKED BY: CEB
APPROVED BY: GEA
PROJECT NO:
DATE: 01/16/17

DISPLAYED AS:
COORD SYS/ZONE: MONTANA ST. PLANES
DATUM: NAD83, NAVD88
UNITS: INT. FEET
SOURCE: PIONEER

N

SCALE IN FEET
0 40 80

MONTANA FISH, WILDLIFE & PARKS
BANNACK STATE PARK
DETENTION BASIN

BANNACK DETENTION BASIN FINAL GRADING & REVEGETATION PLAN

PIONEER TECHNICAL SERVICES, INC.
106 PRONGHORN TRAIL, SUITE A
BOZEMAN, MT 59718
(406) 388-8578

SHEET 6-1